

Driven by efficiency

Bosch technologies are used worldwide in almost all vehicles. People, and assuring their mobility, is what we are focused on.

Therefore, we have dedicated the last 125 years of pioneering spirit and expertise in research and manufacturing to achieving this.

We continue to work on our unique combination of solutions for spare parts, diagnostic devices, workshop equipment and services:

- ▶ Solutions for efficient vehicle repairs
- ▶ Innovative workshop equipment and software
- ▶ The world's most comprehensive range of new and replacement parts
- ▶ Large network of wholesale customers, for quick and reliable parts supply
- ▶ Competent hotline support
- ▶ Comprehensive educational and training offers
- ▶ Targeted sales and marketing support

Find out more at:
www.bosch-automotive-aftermarket.com

**What drives you,
drives us.**

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BOSCH
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ROAD GRIP

Easier inspection, safer on the road:
Bosch Tire Tread Measuring
with TTM 2104 and TTM 2204

Accurate results in seconds: LED Multi-Color Projection and Twin HD Cameras

Tire tread measuring for enhanced road safety

The tires are the only contact points between a vehicle and the road. The quality of this bond decides how safely the vehicle can be accelerated and braked. Especially hydroplaning can only be avoided by sufficient tread depth.

This is why checking tread wear is a mandatory item of all statutory safety inspections. At the same time, uneven tread wear is a clear indication for a workshop that wheel alignment needs attention – and a cue to propose a suspension analysis to the customer.



TTM (Tire Tread Measurement) instantly measures the tire tread as the vehicle passes over the measuring strip.



PC and workshop trolley. Quick input allows direct access to customer data, measurement values and central data storage.



Optional tablets are also available for increased flexibility.

Quick tests with the TTM

Bosch has developed a dedicated device series for fast tire tread measuring:

- ▶ Color-coded projection
- ▶ No moving parts as with laser technology, hence no sensitivity against dust, vibration and moisture
- ▶ Robust against temperature deviations
- ▶ Low profile for uncomplicated measuring of performance vehicles
- ▶ Non-stop measuring
- ▶ Fast measuring within a few seconds
- ▶ Floor-mounted or underfloor variant
- ▶ Three display options

Tire tread measuring: chances and benefits

- ▶ Generate additional business from tire sales
- ▶ Customer loyalty through professional service and use of accurate technology
- ▶ Simple documentation of tire condition



Bosch TTM – perfect display solution for your workshop:

Three different display options are available for tire tread measuring to suit your cost and workshop structure:

- ▶ Smart-TV display with measurement value indication for use in passage ways (left fig.)
- ▶ Workshop PC in trolley with direct access to customer data, measurement values and central data storage
- ▶ Tablet for mobile measurements with high flexibility

Adaptable to any workshop: Tire tread measurement system TTM 2104 and 2204



TTM 2104 low profile ramp variant



TTM 2204 floor mounted variant

Bosch TTM: the perfect solution for your workshop

- ▶ Direct exposure to light has no significant effect on the measurement because tread depth is measured while the vehicle passes over the strip.
- ▶ TTM does not require a compressed air supply.
- ▶ TTM does not require an individual internet connection.
- ▶ Both variants are suitable for installation indoors or outdoors in areas with open sides (roof only).

Much space or hardly any: the TTM fits in

Two variants of the TTM are offered to suit different workshop types:

- ▶ Low profile ramp: this TTM variant is installed on the workshop floor very quickly. The hardware is attached using bolts and plugs.
- ▶ Floor mounted variant: For new buildings or if space in the workshop is limited.



The software is logically structured and easy to understand for hassle-free operation.



Adjustable in light or dark color.

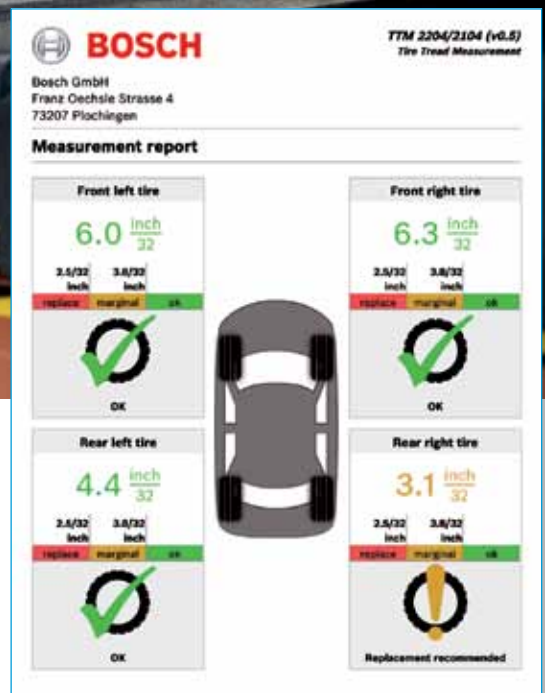


Low-profile ramp variant 85 mm (3.5")

Tire tread measuring of lowered vehicles

The floor-mounted TTM has been engineered for a low profile to ensure suitability for vehicles with performance suspensions.

- Tread depth is measured non-stop as the vehicle passes across the TTM at a max. speed of 8 km/h (5 mph)
- Measurement results are available within a few seconds.



Measurement result can be printed quickly on an A4-size printer.

| Accessories | Order number |
|---|---------------|
| Thread sleeve for tar floors (10 pieces) | 1 691 201 016 |
| Scraper | 1 693 740 218 |
| Shear connector MKT V-P (10 pieces) | 1 691 201 017 |
| Bosch trolley (incl. monitor, mouse, PC and printer) Country specific keyboard needs to be ordered separately | 1 691 201 009 |
| Color printer | 1 693 770 415 |
| Reference object (for ISO 9001) | 1 691 201 014 |
| Cable trunking approx. 0.7 m (2.3 Feet) | 1 691 202 039 |
| Dehumidifying agent (2 pieces) | 1 691 201 005 |
| Steel frame for installation in underfloor pit (2 pieces) | 1 691 201 018 |

| Technical data | Low profile ramp variant | Floor mounted variant |
|--|---------------------------------------|-------------------------------------|
| Dimensions in mm (inches) (H x W x D) | 85 x 2 245 x 1 030 (3.5" x 88" x 40") | 85 x 2 330 x 560 (3.5" x 91" x 22") |
| Max. tire width | 450 mm (17.7") | 450 mm (17.7") |
| Track | 1 080 – 1 820 mm (42.51" – 71.6") | 1 080 – 1 820 mm (42.51" – 71.6") |
| Max. speed | 8 km/h (5mph) | 8 km/h (5mph) |
| Mains supply | 100 to 230 VAC, 50–60 Hz, 1-phase | 100 to 230 VAC, 50–60 Hz, 1-phase |
| Max. axle load | 4 t | 4 t |
| Operating temperature/ Operating range | 0–40°C (32–104°F) | 0–40°C (32–104°F) |
| Protection level of measuring modules | IP65 | IP65 |
| Software languages | 18 | 18 |

Durable, accurate and fast: Tire tread measuring system Bosch TTM



Small objects and soiling on the projection side have no effect on the measurement results.



The measuring strip can be cleaned from the outside without opening mechanical components.



Measurements are based on color-coding – without any moving parts, without being affected by dust, vibration and moisture.

Designed to be tough, withstanding the typical workshop environment:

- ▶ No moving parts, contrary to laser technology
- ▶ Designed for axle loads up to 4 tons
- ▶ Developed to withstand more than 150 000 vehicle passages

High processing speed through state-of-the-art camera equipment:

- ▶ Recording and processing of image sequences with high data volumes in less than 1/10 of a second
- ▶ Display of measurement results within 5 seconds after the rear axle has crossed the strip.

| Product | Description |
|----------|--|
| TTM 2104 | Low profile ramp variant for standard installation |
| TTM 2104 | Low profile ramp variant for inspection pit |
| TM 2204 | Floor mounted variant for standard installation |
| | Will be available soon. |
| TTM 2204 | Floor mounted variant for inspection pit |
| | Will be available soon. |



Network-integrated: Connected Repair von Bosch

Additional benefit – Bosch Connected Repair Software:

When running on a Windows-based system, the TTM software can allocate measurement results to orders and save them as data sets. Saved measurements can be viewed at any time in the customer's order history.

Intelligent integration – Connected Repair:

Under the name Connected Repair, Bosch offers a server-based software solution. The central communication platform simplifies and accelerates work processes on all connected devices. Customer and vehicle data as well as orders and measurement results are available from a central memory location to all connected workplaces. The integration of workshop devices in a network allows access to any data entered at any time.

| Scope of delivery | Order number |
|--|---------------|
| Ramps (4 pieces) Measuring units (2 pieces) Power supply Power and data lines (10 m/32 Ft) Scraper (1 piece) | 1 691 200 004 |
| Ramps (4 pieces) Measuring units (2 pieces) Power supply Switch (1 piece) Power and data lines (10 m/32 Ft) Scraper (1 piece) | 1 691 200 005 |
| Measuring units (2 pieces) Power supply Power and data lines (10 m/32 Ft) Scraper (1 piece) | 1 691 200 006 |
| Measuring units (2 pieces) Power supply Switch (1 piece) Power and data lines (10 m/32 Ft) Scraper (1 piece) | 1 691 200 007 |



The last ten passages across the TTM are available to the user quickly and hassle-free.



Business Analytics: Measuring results are collected for direct evaluation by the workshop leader.